AMENDMENTS TO THE CLAIMS

1. (currently amended): ~~Improved~~An improved reaction chamber for an epitaxial reactor comprising a belljar ~~(14)~~ having a shoulder ~~(42)~~ and made of insulating and transparent material, ~~such as quartz,~~ a susceptor ~~(24)~~ provided with disk-shaped cavities ~~(34a-n)~~ for receiving wafers ~~(36a-n)~~ of material to be treated and having an insulating and chemically resistant flat plate ~~(40)~~ arranged above it, ~~characterized by using~~comprising:

a diffuser ~~(54)~~ formed by a cap ~~(52)~~ supplied by a central dome-piece ~~(88)~~ connected to a symmetrical annular distribution chamber ~~(104)~~ having a plurality of pipes ~~(106a-f)~~ of the same length which connect ~~the~~ said annular chamber ~~(104)~~ of the cap to a dome zone ~~(42, 44)~~ of the ~~belijar~~ belljar situated just underneath a neck ~~(46)~~ connecting an upper flange ~~(48)~~ to the dome ~~(42, 44)~~, said plurality of pipes ~~(106a-f)~~ ensuring a uniform distribution of flow at a lower speed;~~:~~

a cylindrical zone of the belljar ~~(14)~~ extended above the flat plate ~~(40)~~ supported above the susceptor so as to eliminate any interference between the flat plate ~~(40)~~ and shoulder ~~(42)~~;

a minimum internal diameter of the belljar ~~(14)~~ so as to keep the belljar ~~(14)~~ as far away as possible from the susceptor ~~(24)~~; and

on the corners of the susceptor ~~(24)~~, in its upper zone, projecting baffles ~~(122a-g)~~ inserted into recesses formed in the body of the said susceptor ~~(24)~~, said baffles ~~(122a-g)~~ having a length about half the height ~~that of the corners~~ of the susceptor ~~(24)~~.

2. (currently amended): The improved ~~Reaction~~ reaction chamber for an epitaxial reactor~~,~~ ~~according to~~of Claim 1~~, characterized in that~~ wherein the cap ~~(52)~~ of the diffuser ~~(54)~~ is fixed to an annular flange ~~(56)~~ which is in turn fixed to ~~the~~ an upper thickened flange ~~(48)~~ of the belljar ~~(14)~~ by means of a pair of two half counter-flanges ~~(82a, 82b)~~ gripping the annular flange ~~(56)~~ against the upper thickened flange ~~(48)~~ of the belljar ~~(14)~~.

3. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor~~,~~ ~~according to~~ of Claim 2~~,~~

~~characterized in that~~wherein the fixing of the cap ~~(52)~~ of the diffuser ~~(54)~~ to the annular flange ~~(56)~~ is performed by means of a plurality of spring-loaded tie-rods ~~(58a-e)~~ which push in an elastic manner the cap ~~(52)~~ against the annular flange ~~(56)~~.

4. (currently amended) The improved reaction ~~Reaction~~ chamber for an epitaxial reactor~~,~~ ~~according to~~ of Claim 2~~,~~ wherein ~~characterized in that~~ the cap ~~(52)~~ is closed at the top by a flange ~~(86)~~ terminating in a dome-piece ~~(88)~~ communicating with a sleeve ~~(96)~~ for connection to an external source of gas to be used in the same reaction chamber, which dome-piece is provided with a bottom ~~(100)~~ defining at least one circular slit for ensuring a rigorously uniform distribution of gas to an annular chamber ~~(104)~~ for supplying the plurality of pipes ~~(106a-f)~~ emerging from the distributor ~~(54)~~ inside the belljar ~~(14)~~.

5. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor~~,~~ ~~according to~~ of Claim 4~~,~~

~~characterized in that,~~ wherein in addition to the slit in the bottom ~~(100)~~, a further annular slit ~~(102)~~ helps ensure the uniform distribution of gas to the annular chamber ~~(104)~~ supplying the outlet pipes ~~(106a-f)~~.

6. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor~~,~~ ~~according to~~ of Claim ~~4, characterized in that~~ wherein the cap ~~(52)~~ of the distributor ~~(54)~~ comprises an internal chamber ~~(114)~~ for the flow of a cooling fluid.

7. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor~~,~~ ~~according to~~ of Claim 4, characterized in that the outlet pipes ~~(106a-f)~~ are made of a material which is chemically inert with respect to the gas used in the belljar.

8. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 7, wherein

~~characterized in that~~ the outlet pipes ~~(~~106a-f~~)~~ are made of glass.

9. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 7,

~~characterized in that~~wherein the outlet pipes ~~(~~1-06a-f~~)~~ are made of ceramic material.

10. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 7,

~~characterized~~ wherein ~~in that~~ the outlet pipes ~~(~~106a-f~~)~~ are made of quartz.

11. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of ~~claim~~ Claim 1, ~~characterized in that~~ wherein the baffles ~~(~~122a-f~~)~~ fixed to the susceptor ~~(~~24~~)~~ are made of material chemically inert with respect to the gases used in the said chamber.

12. (currently amended) The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 11,

~~characterized~~ wherein ~~in that~~ the baffles ~~(~~122a-f~~)~~ fixed to the susceptor ~~(~~24~~)~~ are made of glass.

13. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 11,

~~characterized in that~~wherein the baffles (122a-f) fixed to the susceptor (24) are made of ceramic material.

14. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~of Claim 11,

~~characterized in that~~ wherein the baffles ~~(~~122a-f~~)~~ fixed to the susceptor ~~(~~24~~)~~ are made of quartz.

15. (currently amended): The improved reaction ~~Reaction~~ chamber for an epitaxial reactor, ~~according to~~ of Claim 11, ~~characterized in that~~ wherein the baffles ~~(~~122a-f~~)~~ fixed to the susceptor ~~(~~24~~)~~ are made of graphite lined with ~~silixon~~ silicon carbide.